

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND the claims as follows:

1. (Currently Amended) A pattern forming material comprising:
a thermal sensitive material layer formed on a target substrate;
a first light-to-heat converting layer formed between the thermal sensitive material layer and the target substrate; and
a second light-to-heat converting layer formed on a surface of the thermal sensitive material layer opposite to the first light-to-heat converting layer,
wherein the thermal sensitive material layer is interposed between the first and second light-to-heat converting layers and the first and second light-to-heat converting layers comprise Ge-Sb-Te alloys; Ag-In-Sb-Te alloys; Ag-In-Sb-Te-V alloys; lithium niobate; methylnitro aniline; or any combinations thereof, and
wherein the first and second light-to-heat converting layers absorb a first activation light radiated thereon and convert the absorbed activation light into heat, whereby a pattern finer than the diffraction limit of an optical system using the first activation light is formed in the thermal sensitive material layer.
2. (Canceled)
3. (Canceled)
4. (Previously Presented) The pattern forming material of claim 1, wherein the thermal sensitive material layer is rendered soluble or insoluble in a developing solution after being irradiated thereon by a second activation light which has a different wavelength or a same wavelength as a wavelength of the first activation light.

5. (Previously Presented) The pattern forming material of claim 4, wherein the thermal sensitive material layer, after heat is generated in the first and second light-to-heat converting layers by the irradiation of the first activation light, is no longer rendered photosensitive due to the exposure to the heat.

6. (Previously Presented) The pattern forming material of claim 4, wherein the thermal sensitive material layer is rendered insoluble in the developing solution by the heat generated in the first and second light-to-heat converting layers by the first activation light irradiation.

7. (Previously Presented) The pattern forming material of claim 5, wherein the thermal sensitive material layer is made of a positive type photoresist.

8. (Previously Presented) The pattern forming material of claim 6, wherein the thermal sensitive material layer is made of a negative type photoresist.

9. (Previously Presented) The pattern forming material of claim 1, further comprising at least one thermal protective layer between the second light-to-heat converting layer and the target substrate.

10. (Previously Presented) The pattern forming material of claim 9, wherein the thermal protective layer is a substrate protective layer formed between the first light-to-heat converting layer and the target substrate.

11. (Previously Presented) The pattern forming material of claim 9, wherein the thermal protective layer is a thermal buffer layer formed between the thermal sensitive material layer and the first light-to-heat converting layer.

12. (Previously Presented) The pattern forming material of claim 9, wherein the thermal protective layer is a thermal buffer layer formed between the second light-to-heat converting layer and the thermal sensitive material layer.

13. (Previously Presented) The pattern forming material of claim 1, further comprising a cap layer on the second light-to-heat converting layer.

14. (Currently Amended) A method of forming a pattern on a pattern forming material comprising a thermal sensitive material layer interposed between first and second light-to-heat converting layers, the method comprising:

radiating a light onto the first and the second light-to-heat converting layers to generate heat therein that changes a pattern portion of the thermal sensitive material layer,

wherein the first and second light-to-heat converting layers comprise Ge-Sb-Te alloys; Ag-In-Sb-Te alloys; Ag-In-Sb-Te-V alloys; lithium niobate; methylnitro aniline; or any combinations thereof, whereby a pattern finer than the diffraction limit of an optical system using the light is formed in the thermal sensitive material layer.

15. (Currently Amended) A method of forming a pattern using a pattern forming material including a thermal sensitive material layer formed on a target substrate, a first light-to-heat converting layer formed between the thermal sensitive material layer and the target substrate, and a second light-to-heat converting layer formed on a surface of the thermal sensitive material layer opposite to the first light-to-heat converting layer, the thermal sensitive material layer being interposed between the first and second light-to-heat converting layers and the first and second light-to-heat converting layers comprise Ge-Sb-Te alloys; Ag-In-Sb-Te alloys; Ag-In-Sb-Te-V alloys; lithium niobate; methylnitro aniline; or any combinations thereof, the method comprising:

radiating a first activation light onto the first and second light-to-heat converting layers to generate heat therein and change a pattern portion of the thermal sensitive material layer; and

removing a non-pattern portion of the thermal sensitive material layer, whereby a pattern finer than the diffraction limit of an optical system using the first activation light is formed in the thermal sensitive material layer.

16. (Previously Presented) The method of claim 15, further comprising radiating a second activation light onto the thermal sensitive material layer after the pattern portion has been changed.

17. (Previously Presented) The method of claim 15, further comprising radiating a third activation light onto the thermal sensitive material layer before radiating the first activation light.

18. (Previously Presented) The method of claim 15, wherein the thermal sensitive material layer is made of a positive type photoresist.

19. (Original) The method of claim 15, wherein the thermal sensitive material layer is made of a negative type photoresist.

20. (Previously Presented) The pattern forming material of claim 1, wherein the target substrate is thermally resistant.

21. (Previously Presented) The pattern forming material of claim 10, wherein the substrate protective layer is formed on the substrate.

22. (Previously Presented) The method of claim 15, wherein the thermal sensitive material layer changes properties due to heating or activation light irradiation, allowing a pattern to appear through a development process.

23. (Previously Presented) The method of claim 15, wherein at least two surfaces of the thermal sensitive material layer are heated, enabling a high aspect ratio pattern to be formed.

24. (Previously Presented) The method of claim 16, wherein the second activation light is blue light.

25. (Previously Presented) The method of claim 16, wherein the non-pattern portion of the thermal sensitive material layer is removed by a developing solution.

26. (Previously Presented) The pattern forming material of claim 1, wherein the thermal sensitive material layer formed on the target substrate.